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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,566	04/13/2001	Masao Washizu	010516	2583

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EXAMINER

OLSEN, KAJ K

ART UNIT PAPER NUMBER

1753

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/833,566	<b>Applicant(s)</b> WASHIZU ET AL.	
	<b>Examiner</b> Kaj K Olsen	<b>Art Unit</b> 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-26 and 29-44 is/are pending in the application.  
4a) Of the above claim(s) 22-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-21, 27-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 22-26 remain withdrawn from consideration.

### ***Double Patenting***

2. Claims 33-36 and 41-44 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 29, 30, 31, 32, 37, 38, 39 and 40 respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Although applicant has amended claim 17 to remove a number of the previous indefinite uses of quotations, the amended language has a quotation mark before "substance".

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 15, 19, 33-36 and 41-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Pethig et al (USP 5,814,200).

8. With respect to claim 15, Pethig discloses a method for separating substances contained in a liquid where the fluid is subjected to negative dielectrophoretic force (col. 19, lines 44-65). With respect to the claimed vacant space (see 112 rejection above), any number of the spaces between the electrodes would read on the claimed vacant space (e.g. see fig. 6). Because the electrode arrangement of Pethig is inherently for the concentrating of substances any of the vacant spaces having potential plateaus shown in fig. 15a, 15b, 16a, 16b, 18a, or 18b would be vacant spaces that allows particles to flow so that the substances land in the potential wells and concentrate the substances.

9. With respect to claim 19, the particle of Pethig are optically detected (col. 20, lines 7-19).

10. With respect to new claims 33-36 and 41-44, the liquid of Pethig appears to be positioned everywhere on and about the electrodes and vacant spaces of the electrodes.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pethig '200 in view of Benecke et al (USP 6,149,789).

14. Pethig set forth all the limitations of the claim, but did not explicitly disclose the use of a lid for defining a gap between the electrodes. Benecke discloses in an alternate dielectrophoresis device the use of a cover (i.e. a lid) over the electrode assembly (col. 5, lines 15-21). Said lid would prevent contamination of the device with unwanted sample. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Benecke for the method of Pethig in order to prevent sample contamination.

15. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pethig in view of Benecke as applied to claim 16 above, and further in view of Parton et al (USP 5,993,631).

16. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pethig in view of Parton.

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17. Pethig (or Pethig in view of Benecke) set forth all the limitations of the claim, but did not explicitly disclose the set forth complex. Parton teaches in an alternate dielectrophoretic device that the substance being analyzed can be either cells (i.e. what Pethig analyzed) or complexes of particles reading on the claimed substances of the claims (col. 3, line 1 through col. 4, line 64). The later configuration allows one to extend the dielectrophoresis device to, as an example, particular nucleic acid sequences. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Parton for the method of Pethig (or Pethig and Benecke) in order to extend the utility of the given dielectrophoretic method to other biological materials of interest.

### ***Response to Arguments***

18. Applicant's arguments filed 2-25-2004 have been fully considered but they are not persuasive. With respect to the teaching of Pethig, applicant urges that the examiner appears to be reading the gap between the plurality of electrodes of Pethig on the claimed vacant space. This is incorrect. In figure 6 of Pethig, the examiner was referring to the gaps between each leg of the interdigitated electrodes. In particular, fig. 6 shows two interdigitated electrodes. One electrode is along the "X( $\mu$ m)" axis and the other electrode is roughly centered about the 300 on the "Y( $\mu$ m)" axis. The examiner was reading the troughs in between the two higher portions of a given electrode as reading on the broadly defined "vacant spaces". For example, the intersection of 100 (or 300) on the "X( $\mu$ m)" axis and the 100 (or 250) on the "Y( $\mu$ m)" axis would read on a vacant space in an electrode. This is different from the gaps between the electrodes, which would the examiner would agree would not read on the claimed vacant space. Although the

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examiner will acknowledge that the vacant spaces of present invention differ from the vacant spaces of Pethig (e.g. see p. 17 of the applicant's response), that distinction has not been claimed free of the teaching of Pethig.

19. Applicant's traversals of the other rejections appears to rely on applicant's belief that Pethig fails to teach the limitations of the independent claims. Because that was not persuasive (see above), these arguments are similarly unpersuasive.

### ***Conclusion***

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The

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examiner can normally be reached on Monday through Thursday from 6:30 A.M. to 4:00 P.M. and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kaj Olsen Ph.D.  
Primary Examiner  
AU 1753  
June 7, 2004